

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 11, 16-18, and 20-32 are pending. Claim 18 is amended to address an informality. Support for the amendment to Claim 18 is self-evident. Claims 31 and 32 are newly added. Support for newly added Claims 31 and 32 can be found in Figs. 6 and 7 and the description thereof, for example. Claims 1-10, 12-15, and 19 were canceled previously. No new matter is added.

In the outstanding Office Action, Claim 18 was objected to for informalities. Claims 11, 16-18, 21, 22, 24-26, and 28-30 were rejected under 35 U.S.C. § 103(a) as obvious over Muirhead (U.S. Patent No. 6,661,339) in view of Brandner et al. (U.S. Patent Pub. 2005/0115973, herein "Brandner"). Claim 20 was rejected under 35 U.S.C. § 103(a) as obvious over Muirhead and Brandner in view of Abare (U.S. Patent No. 6,627,016). Claims 23 and 27 were rejected under 35 U.S.C. § 103(a) as obvious over Muirhead and Brandner in view of Goto (U.S. Patent Pub. 2002/0017527).

Regarding the objection to Claim 18 for informalities, Claim 18 is amended as suggested in the outstanding Office Action. Accordingly, Applicants respectfully submit that the objection to Claim 18 is overcome.

Regarding the rejection of Claims 11 and 18 as obvious over Muirhead in view of Brandner, that rejection is respectfully traversed by the present response.

Independent Claim 11 recites, in part:

**a component including a portion with a conical surface profile, the component including a tubular shape;  
a tank with an opening, a perimeter of which opening includes a conical surface profile; and**

...  
wherein the component and the tank are molded in one or more molds including impressions corresponding to the conical surfaces,

**wherein the tank and component each include a multilayer structure and, along the entire surface where the component is fastened to the tank, a number of superposed layers is equal to a sum of a number of layers in the component and a number of layers in the tank, and**

**wherein the multilayer structure includes at least two layers of high-density polyethylene (HDPE) between which a layer comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted.**

Thus, the component and opening include conical surfaces. The tank and component each include a multilayer structure. Along the entire surface where the component is fastened to the tank, a number of superposed layers is equal to a sum of a number of layers in the component and a number of layers in the tank. Claim 18 recites substantially similar features in method format.

One benefit of the arrangements recited in independent Claims 11 and 18 is the ability to attach a multilayer accessory to a multilayer tank while obtaining improved impermeability and a stronger weld in comparison with conventional multilayer tanks.

Muirhead describes a fuel tank, optionally multilayered, with a conical recess **into** which a flange plate is fastened by welding (col. 11, ll. 41-54). As acknowledged in the outstanding Office Action, the flange plate is not disclosed to be multilayered. Therefore, Muirhead does not disclose in what arrangement the respective layers of the tank and a multilayer flange plate would have to end up after being welded together.

The purpose of the conical recess in Muirhead *is to be able to dispose a flange plate* interiorly upon the surface of the intended end product to reduce the vertical space occupied by the apparatus. In this regard, Muirhead states:

It should also be noted that the flange plate 104 is interiorly disposed upon the surface of the intended end product to reduce the vertical space occupied by the apparatus. This is in marked contrast to the inspection tower of U.S. Pat. No. 6,179,145, which is exteriorly disposed upon a fuel tank surface.<sup>1</sup>

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<sup>1</sup> Muirhead, col. 12, lines 12-15.

Hence, Muirhead is concerned with efficiently attaching a flange plate to a fuel tank with a view to obtaining an end product with **reduced height**.

The outstanding Office Action asserts that one of ordinary skill in the art would modify the system of Muirhead so as to include the component from a multilayer structure of Brandner in order to help prevent fuel permeation.<sup>2</sup> However, Brandner describes a **direct** attachment of an accessory such as a fill nipple to the tank. In contrast, Muirhead uses a flange plate (122) to carry the accessories (125) that are in turn connected to the flange plate. In other words, Brandner and Muirhead are directed to different purposes.

Further, Muirhead intends to reduce the overall height of its attachment, while Brandner actually externally adds to the height of its connection as shown in Fig. 2 of Brandner.

In light of the different purpose and techniques used by Brandner and Muirhead, a person of ordinary skill in the art would not have had any apparent reason to produce the system recited in Claim 11 by applying the technique described in Brandner, which deals with the attachment of the fill nipple to the tank, to the attachment of the flange plate (which then carries other components) described in Muirhead.

The differences between Muirhead and Brandner is significant, and a person of ordinary skill in the art would not have found the combination of these references obvious at the time the inventions recited in Claims 11 and 18 were made. The outstanding Office Action cites Muirhead for the conical surface recited in Claim 11. However, if one were to eliminate the flange plate from the Muirhead tank and weld accessories **directly** to the tank as set forth in Brandner, there would be no reason to keep the conical recess of Muirhead, as the height gain caused by the flange plate in the original configuration would no longer occur. In other words, modifying Muirhead to include the features of Brandner as asserted in the

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<sup>2</sup> Outstanding Office Action, page 5.

outstanding Office Action would cause Muirhead to omit at least one other feature recited in Claim 11. Accordingly, a person of ordinary skill in the art would not have found it obvious to produce the system recited in Claim 11, which recites a component including a portion with a conical surface **as well as** a tank and component that each include a multilayer structure.

However, even if one were to combine Muirhead and Brandner, it must be recognized that Brandner describes that the fill nipple should be a multilayer structure simply to avoid fuel diffusion through the walls of the fill nipple itself (see "Background of the Invention"), where the fill nipple of Brandner is compared with prior art monolayer HDPE fill nipples which "were not highly effective at reducing or inhibiting hydrocarbon permeation to the atmosphere".<sup>3</sup> This concern is unrelated to the specific permeability problem occurring at the weld. For this problem, Brandner provides an additional cover (66). Hence, any reasonable combination of Muirhead with Brandner would be a monolayer flange plate, welded to the conical recess of the fuel tank, and covered by an additional impermeable cover. Clearly, this approach does not lead to the multilayer system recited in Claim 11.

Accordingly, Applicants respectfully submit that independent Claims 11 and 18 and the claims depending therefrom patentably distinguish over any reasonable combination of Muirhead and Brandner.

None of the remaining references remedies the deficiencies of Muirhead and Brandner.

### **Claims 23 and 27**

Dependent Claim 23 recites

The fastening system according to Claim 21, wherein the conical surface of the perimeter of the opening in the tank protrudes from a portion of the tank wall in a direction toward the component.

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<sup>3</sup> Brandner, [0003].

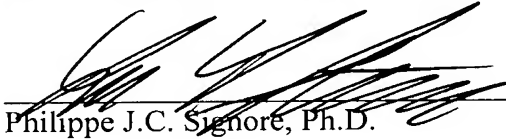
Claim 27 recites substantially similar features.

Regarding the rejection of Claims 23 and 27 as obvious over Muirhead and Brandner in view of Goto, Goto appears to describe that a perimeter of the opening in a multilayer tank wall protrudes in a direction **toward** the component. Given the expressly stated purpose of the conical recess in Muirhead (height reduction), it would go directly against the intended use of Muirhead to replace the recess by a protrusion. Accordingly, no reasonable combination of Muirhead and any of the secondary references would include all the features recited in either of Claims 23 or 27.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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